Digitalize Building Permits Procedure: Canton of Valais, Switzerland

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Abstract. A growing interest in e-Government practices is currently expressed within public administrations. This paper describes the evolution of our study in the field of impacts of digitization on the management of administrative procedures. We present a full description of the methodology used, the assumptions and the analysis model on which our study is based. Due to its complexity and its interdepartmental characteristic, the building permit procedure is selected to be the representative administrative process of concern. As Swiss public administrations is the central subject of our research, a description of the relevant legal framework of the country is presented. Specifically, the case study of the Canton of Valais is described in detail. The experience gained from the semi-structured interviews conducted for this case study is exposed

Keywords. Digitization, building permits, e-Government, administrative procedure, optimization, time, complexity

1. Introduction

The recent trend of the last decades, in both personal and in organizational level, is the usage of new technologies. Private as well as public sector make reforming efforts towards modernization. In any case, internet and new technologies impose the transformation of public administrations. Public administrations try to take advantage of the electronic service delivery, as new technological solutions are promising. They invest in the provision of new opportunities offered by online and mobile applications [1].

Furthermore, optimization of administrative procedures was always one of the main targets of public administrations. Within the years, organizations applied several methods in order to achieve this goal. To mention that, when managing, administrations need to check if the adequate measures are applied [2]. Another important characteristic of public administration, usually blamed for, is the complicated, time-consuming nature of administrative procedures, in other words, the administrative burden and the delays in the provision of their services [3].

Trying to reach an interactive communication with their citizens-users, the public administrations rely on the optimal incorporation of e-Government tools and methods into their interior. E-Government implementation involves many elements of public administrations making the procedures even more complicated [4,5]. The complexity becomes worse by changes introduced during the implementation of e-services, due to

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that usage of new electronic means [6]. Moreover, according to [7], internet can have a significant impact on governments, who will face really complex challenges while passing to a further interaction with their users.

The electronic delivery of services in the public sector could change them to more efficient and transparent ones [6]. Specifically, e-Government is considered to provide better quality of services [1] as they are responsive, efficient, and reliable with their users' needs, in terms of operation and responsiveness to the citizens [8]. In accordance with the second stage of the model of [9] concerning e-Government projects, administrations provide full access to electronic transactions and online databases for services, such as paying taxes, fees, etc.

As part of the improvement of the delivery of public services, the notion of "one-stop service", using information technologies, is an integrated service which can be offered by one provider, assuring interdepartmental coordination [10]. Also named as "one-stop portal", it is considered to be a cost-effective solution to the delivery of services [11], as users can carry out any level of government transaction contacting only one governmental point [12], contrary to their past need of contacting numerous different public units for the provision of one single service.

Finally, the effort to provide services electronically has already been described in several papers in the literature, in different ways by multidisciplinary researchers, which makes it difficult to create a knowledge basis [13]. The need of a complement study on the quality of government, including E-Government implementations, is also highlighted [14]. Moreover, according to [6] there is a lack of published research into the implementation of electronic services. The Organization for Economic Co-operation and Development (OECD) also mentions the need for international standards or indicators relevant to the impacts of e-Government on the facilitation of the decision-making process. Our study intends to fill the gap, regarding the impact of digitization of administrative procedures, trying to define a representative set of indicators.

2. Building Permits Procedure: Regulatory Provisions in Switzerland

Switzerland, also known as Swiss Confederation (official name of the Swiss federal state), has a federalist structure of three political levels: the Confederation, the Cantons and the Communes. Furthermore, Switzerland consists of 26 cantons, which have the status of federal states. Each Canton consists of Communes. Communes are the municipalities, being the basic level of political organization in Switzerland. All cantons apply almost the same policies. In addition to the tasks entrusted to them by their canton or by the Confederation, the communes have their own powers in several areas.

To begin with, at the federal level there is the Swiss Federal Law on Spatial Planning (LAT) [15]. According to article 1 (LAT) ''The Confederation, cantons and municipalities ensure the economical land use and the separation between building and non-building parts of the territory'' where at the same time ''they coordinate those activities that have an impact on the organization of the territory''. In the performance of their duties, they also support the management of the development of urbanization towards the inside of the built area, maintaining the quality of the appropriate habitat. Article 22 (LAT) stipulates that ''no construction or installation can be created or changed without authorization of the competent authority''. Equally, cantonal law assigns the exceptions inside the building zone (art.23, LAT). Canton laws also regulates

the procedures regarding the implementation, transformation or change of buildings and installations, defining the adequate deadlines as well. (art.25, LAT).

As a consequence, each canton arranges the building permit procedure independently. This is the reason why in the Swiss territory there are many different ways of approaching and implementing the issue of building permits. In some cases, there are cantons which centralize the procedure and don't provide flexibility to the inferior administrative levels. In other cases, municipalities have great eligibility for issuing building permits, thus reducing the workload of cantonal administration.

Besides, in the frame of optimization of cyber services, national sub-strategies with a thematic focus have been adopted within the framework of the eGovernment Strategy in Switzerland. This can be achieved by the implementation of individual prioritized projects so that they can be coordinated to a nationwide extent. In the Catalogue of Prioritized Projects of the Swiss Confederation [16] the undertaken projects can be identified in a coordinated manner within the framework of the eGovernment Strategy in Switzerland. As a result some specific public services can be provided primarily, due to the fact that they provide a worthy cost-benefit ratio for the target groups and the administration when provided electronically.

Regarding issuing building permits, a priority service project entitled A1.06 concerns the ''Application for construction permit'', led by the Swiss Conference of Directors of Public Works, Planning, and Environmental Protection (BPUK) [16].

In accordance to A1.06 project, the applicant can submit application and the necessary documentation for a building permit to the competent authority electronically. The applicant can track, at any time, the approval process and will also receive the building permit electronically after the procedure is concluded. Compared to the old paper-based approval procedure, internal administrative procedures are simplified, which means that the effort is significantly reduced. Additionally, in administrative terms, even partial automation of the procedure guarantees an optimization, which increases quality gains and finally efficiency for both applicants and authorities. High rationalization potential is generated, though, major obstacles to fully electronically processing building permits are still to be overcome, such as for example the need for blueprints on paper.

3. Research Methodology & Analysis Model

The objective of our research is to follow, to study and analyze the impact of the implementation of e-Government practices. In particular, the implementation and the dual effect that it has on both the function of public administrations (internal effect) and the interaction with its users (external effect). In order to achieve credible conclusions we use a combination of qualitative as well as quantitative methodology tools.

In this purpose and after thorough investigation of the literature, we focus on the three most appropriate dimensions in order to evaluate the digitization of administrative services and to measure the impact of electronic provisions of public administrations. The dimensions under consideration are administrative tasks, time and roles.

For each of the previously mentioned dimensions we have created a relevant research question, which will enable us to examine and deepen our understanding of the consequences that the use of Information and Communication Technologies (ICT) has to public administrations. Furthermore, each research question is associated with a specific theoretical assumption.

The principal research question corresponding to the dimension of administrative tasks is ''How does digitization transform administrative procedures are''. Based on the assumption that ''Digitization in the public sector drastically alters administrative procedure'', we expect that digitization will lead to less complicated procedures. It is also estimated that, especially for interdepartmental procedures, a digital approach will ease task completion process.

Regarding the aspect of time, we decided to study ''what the impacts of digitization on the time required to implement and provide an administrative service''. Our assumption is that ''Digitization in the public sector will accelerate administrative procedures''. As time is always a crucial factor, we suppose that digitization can considerably eliminate the processing time as well as the service delivery time. Digitalizing the process facilitates the communication between users and administration, eventually accelerating the procedure.

In relation to the dimension of role we will explore ''How digitization modifies roles and skills of civil servants''. We presume that labour conditions, employment needs and staff skill requirements are highly affected by a potential automation and dematerialization of the process. Modifications could apply to multiple levels, ranging from the human resource management to the redefinition of professional entities in an e-government environment. Furthermore, through the big task elimination civil servants will be allowed to be involved in more productive function of public administration.

In this respect, we have formulated an analysis model which includes the previously mentioned Hypothesis. Based on the three dimensions of interest and after an extensive exploration into relevant literature, we identified several appropriate indicators which will allow us to measure the qualitative and quantitative impact on the management of administrative procedures.

For each dimension of concern we detected a list of pertinent indicators. These indicators, presented in Table 1, will allow us to track and quantify the impact of digitization within the framework of public administration.

Table 1. Analysis model

Dimensions	Indicators
Administrative Tasks	• Volume of services provided by electronic means
	• Extent of the use of services offered by the traditional means (paper)
	• Number of activities involving several departments to provide a service
	• Request of documents; Reduction of volume of document requests
	• Existence of aid or technical support of a service (call center, help desk, information desk, etc.)
Time	• Time required to request a service
	• Time required to provide a service
Roles	• Number of people involved in providing a service
	• Need to recruit new specialized employees
	• Need for trained staff to adapt to new tools of e-services

The main field of this analysis concerns the Swiss public administrations. Specifically it involves research and comparative case study between three different Swiss Cantons, more specifically the Cantons of Geneva, of Neuchâtel and of Valais.

In an effort to facilitate our attempts, we selected a particular, process, the building permit procedure. It involves several complicated tasks and numerous stakeholders and multilevel communication. Currently, it is regarded as a time consuming procedure,

known for its complexity but at the same time convenient as several Swiss Cantons are introducing relative online procedures.

Up until now, we focus on field study, analyzing pertinent documentation and gathering further information. Following our methodology, we have distributed an online questionnaire survey [17] and in the context of our case studies he have also conducted a number of semi-structured interviews, presented in detail in following section.

4. Case Study: The Canton of Valais

On the way to our research path, the canton of Valais was chosen to be the preliminary field to explore. A canton with a special geographical and geological position, plays an important role as a traditional touristic point, having a significant number of building permit applications for both owner occupancy as well as for commercial space and hospitality industry or businesses establishments.

As mentioned above in the regulatory provisions' part, each canton, having an independent political structure, is responsible for developing its own law regulations as far as it concerns the building permit process. As required by the Swiss Federal Law on Spatial Planning, the canton of Valais sets this procedure by the Building Act of 8 February 1996. The competent authorities providing building permits in matters of the article 2 of this latter are ''the municipal council for projects located within the building zones, hamlets areas and maintaining areas of rural housing'' and ''the cantonal commission for the construction of buildings and facilities located outside building zones.''

Under the circumstances of the cantonal law of Valais mentioned above, the municipalities (communes) have a very great margin of manoeuvre (flexibility), as they are responsible for all the residential, central, industrial areas and the buildings of public facilities as well. On the other hand, according the cantonal law on constructions the Cantonal Committee for Constructions (C.C.C.) is also responsible for the building projects to which the municipality is an applicant or party.

The typical current situation, demands that the applicants send their building permit application folder to the municipality in paper form. After checking the folder, the municipality uses its own file management software for constructions and then sends it to the Canton in a paper form folder. Subsequently Canton stores over again the same information in its own database. Currently there is no citizen-oriented portal for applying building permits.

Equally important, so that its work can be facilitated, the C.C.C. has under its supervision a service which contribute to the proper function of the building permit procedure. This is the Cantonal Secretariat of Constructions (S.C.C.) which, at the same time, discharges the duties of the Police of Constructions (Po.Co.).

The S.C.C., for a pre-considering building permit application transmitted by the municipalities, requires the opinion-notice (préavis) and the decisions of the competent cantonal authorities. Then, within 30 days from the receipt of a complete application, it communicates to the municipalities the views of the authorities consulted. Furthermore, for a building permit competent to the cantonal level, S.C.C. prepares the files submitted and provides the secretariat for the C.C.C. Finally, as far as it concerns projects within the jurisdiction of the Confederation, S.C.C. collects the positions of municipal and cantonal authorities and sends them to the competent authority.

In this context, the links with the municipalities are particularly strong. Building permit applications are actually received and processed by the municipality which, if necessary, forwards them to the canton. The communication between partners is by mail (with a lot of paper) and the registration of the folder is performed both in the communal and cantonal level. As the whole procedure is carried out by the traditional paper-based channel[1], there exist several problems, delays, waste of time and for that reason we consider that there is still room for improvement.

According to administrative documentation, an analysis of the communal and cantonal building authorization process revealed the need of developing a unique process involving all the stakeholders (applicants, municipalities, cantons). The need for an electronic platform for building permits was studied as well. Additionally, the development of a standardized process, especially the organizational and the technical prerequisites, the stages, the deadlines and the necessary resources, were underlined as essentials.

In the frame of our study, the canton of Valais was the first district to inquire into. Having already taken into account the respective legislation, we collected several administrative documents relating to the building permit process provided by the relevant administrative authorities.

As already mentioned, the procedure of building permits in Valais's canton is mainly based on the traditional paper channel. In fact, our field research indicates that the main parts of this administrative procedure are far from being completely dematerialized. Nevertheless, there exists an internal task management system (SAP) which also involves some data relevant to the building permit procedure.

Additionally, applicant can only get online information relative to their application for the issue of a building permit. This can be achieved through a website where the applicant, having the identification of the application, can check the state of progress of the investigation of his folder, but they lack the right to get information about the positive or negative opinion of the different services.

Relying on these laws, on the administrative documentation and on our research model, we proceeded to the next stage of our study, which is nothing more than meeting with the main participants in the process. The evolution, the details and the initial results of the interviews will be presented in the following section.

5. Interviews

As mentioned above, the crucial component of this study is a series of semi-structured interviews with the main key actors and stakeholders. Beyond the analysis of documentation provided by the administrations and the field observations, we deemed appropriate to conduct one hour-long interviews. For each canton it is scheduled that roughly ten people be interviewed, participating in the procedure of issuing building permits.

On the basis of an open-ended questionnaire, as used for the semi-structured interviews, we are flexible to modify the content according to interviewee's profile. The interview takes the form of a discussion which is likely to be amended depending on the information provided through the answers [18].

Moreover, in order to select the suitable individuals among those who take part in this procedure, we based on our analysis model, taking into consideration the size, the type of the administration, as well as the people's professions. Under those circumstances,

we try to guarantee the weighty representation of participants in the building permit procedure.

Heretofore, as far as it concerns the canton of Valais, a number of people were selected within the main administrative departments participating in the procedure of concern, such as the Cantonal Secretariat of Constructions (SeCC) and Construction Inspection Services, Department of transport and environment (DTEE). To mention indicatively, some of the professional qualities of the interviewees are head of the department, computer coordinator and administrative collaborator. Equally important were some interviews with parties out of the public sector who are also involved in the process of issuing building permits.

The preliminary results show that the building permit procedure requires the cooperation of numerous administrative departments. For instance, for a small building permit project, the opinion-notice (préavis) of at least five different services is necessary, whereas for a large building permit project it could be necessary to obtain the opinion-notice (préavis) of up to twenty different services. This reflects the complexity as a result of the transversality of the procedure (Figure 1).

Furthermore, this characteristic of complexity reinforces the results of a previous online elementary questionnaire survey conducted in 2012 for the aim of the same research. More specifically, this latter questionnaire survey indicated that the more complex a service is, the less electronic means are used. This is also proven by the fact that in the moment issuing building permits in the canton of Valais is still being carried out on a paper-based procedure.

Figure 1

Such type of collaboration not only increases the degree of difficulty of the procedure but it also extends the length and the duration of the procedure. As a consequence of the necessity of the interdepartmental cooperation and of the complexity of the procedure's nature (ex. environmental issues) [19], the authorities find it difficult to meet the delivery deadlines.

Another interesting point revealed from the interviews conducted in the Canton of Valais, is that the enforced laws could also be an inhibiting factor for such administrative procedures. The lack of deadlines which do not put pressure to the working parts; or the lack of not clearly predefined responsibilities, for instance, could result in long delays. The need to correct the existing application form and subsequently to simplify-optimize it was also underlined. This is over again a jurisdictive problem to be solved.

Finally, there is frequently a delay, caused by the applicants, due to incomplete applications, curbing the progress of the issuing of building permit folder. The different services of concern cannot provide their opinion-notice (préavis) if the application is not entirely complete, a time-consuming factor, which also lies in the applicant's responsibility; whether they are the homeowner-citizen or an authorized professional [18].

6. Future Work

This ongoing research is an initial effort to conceptualize the impact of digitization on the management of administrative procedures. The theoretical framework and the research model used for the purposes of this study are still to be tested in order to tackle the question of how digitization transforms administrative procedures, and more specifically in terms of time and roles.

Currently, a detailed report concerning the treatment of building permits in the canton of Valais is being prepared. As part of our future work will be the documentary analysis and the analysis of interview transcripts, using the qualitative data analysis software ATLAS.ti. In parallel, we will finalize the respective interviews in the canton of Geneva and Neuchâtel, which will also be transcript, coded and at the final stage analyzed by the same software.

The ultimate step of this research will be the combination of all collected data. The target is to be able to draw conclusions on the impact of digitization especially on the building permit procedure, and generally on all administrative procedures.

Endnotes

1. The term "Service Channel" defines the way in which a service is requested and delivered.
    We have distinguished two types of service channels: 'Traditional Service Channel,' which includes paper services, telephone and fax; Electronic Service Channel,' which includes services through e-mail, the Internet and social networks.

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